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(54) Title: **MUTANT SODIUM CHANNEL Na_v1.7 AND METHODS RELATED THERETO**

(57) Abstract: Described are mutant Na_v1.7 sodium channel alpha-subunits and nucleic acid sequences encoding such mutants. Further described are methods for characterizing a nucleic acid sequence that encodes a Na_v1 sodium channel alpha-subunit, methods for determining a Na_v1.7 haplotype, methods for determining a subject's predisposition to a neurologic disorder associated with a sodium channel mutation, and methods of identifying a compound that modulates mutant Na_v1.7 sodium channels. Other materials, compositions, articles, devices, and methods relating to mutant Na_v1.7 sodium channels are also described herein.

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INTERNATIONAL SEARCH REPORT

International application No.

PCT/US05/02059

A. CLASSIFICATION OF SUBJECT MATTER IPC(7) : C07K 14/00; C12N 5/10, 15/00, 15/11, 15/63; C12Q 1/68 US CL : 435/6, 69.1, 320.1, 325; 530/350; 536/23.5; 800/2 According to International Patent Classification (IPC) or to both national classification and IPC		
B. FIELDS SEARCHED Minimum documentation searched (classification system followed by classification symbols) U.S. : 435/6, 69.1, 320.1, 325; 530/350; 536/23.5; 800/2 Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) Please See Continuation Sheet		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 6,673,549 (FURNESS et al.) 06 January 2004 (06.01.2004) see entire document.	1-88
<input type="checkbox"/> Further documents are listed in the continuation of Box C. <input type="checkbox"/> See patent family annex.		
* Special categories of cited documents:		
"A"	document defining the general state of the art which is not considered to be of particular relevance	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"E"	earlier application or patent published on or after the international filing date	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"L"	document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents; such combination being obvious to a person skilled in the art
"O"	document referring to an oral disclosure, use, exhibition or other means	"&" document member of the same patent family
"P"	document published prior to the international filing date but later than the priority date claimed	
Date of the actual completion of the international search 01 October 2005 (01.10.2005)		Date of mailing of the international search report 09 NOV 2005
Name and mailing address of the ISA/US Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450 Facsimile No. (703) 305-3230		Authorized officer Michael Pak Telephone No. 571-272-1600

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US05/02059

Box No. I Nucleotide and/or amino acid sequence(s) (Continuation of item 1.b of the first sheet)

1. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, the international search was carried out on the basis of:

a. type of material

☒

a sequence listing

☐

table(s) related to the sequence listing

b. format of material

☒

on paper

☒

in electronic form

c. time of filing/furnishing

☒

contained in the international application as filed

☒

filed together with the international application in electronic form

☐

furnished subsequently to this Authority for the purposes of search

2. ☐

In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

3. Additional comments:

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US05/020591

Continuation of B. FIELDS SEARCHED Item 3:
BRS, GENESEQ, PIR, PGPUB

search terms: sodium channel, mutation, Nav1.7